

Ensemble de Mandelbrot

Dessin d'une fractale : [l'ensemble de Mandelbrot](#)

```
<sxh python; title : ensemble_mandelbrot.py> #!/usr/bin/env python # -*- coding: utf-8 -*- # version un peu aménagée du travail de BF, ba2 chimie 2012-2013 # ref :
```

```
http://fr.wikipedia.org/wiki/Ensemble\_de\_Mandelbrot
```

```
from Tkinter import * from random import randrange
```

```
def mandel2(c):
```

```
    z=0
    for h in range(0,50):          #nombre d'iteration
        z = z**2 + c
        if abs(z) > 2:            #abs(z) correspond au module de z
            break                 #arrête l'exécution du for si la condition est
remplie
        if abs(z) >= 2:
            return False
    else:
        return True
```

```
root = Tk() w = Canvas(root, width=600, height=600, background='white' ) w.pack()
```

```
for hx in range(0,600,50):
```

```
    w.create_line(0,hx,600,hx,fill="blue")
```

```
for hy in range(0,600,50):
```

```
    w.create_line(hy,0,hy,600,fill="blue")
```

```
print ("Initializing...")
```

```
for x in range(0,600):
```

```
    real = x / 200.0 -2
    for y in range(0,600):
        img = y / 200.0 -1.5
        c = complex(real, img)
        if mandel2(c):
            w.create_line(x,600-y,x+1,601-y,fill="black")
            w.pack()
```

```
print ("Complete!")
```

```
root.mainloop()
```

```
</sxh>
```

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Améliorations possibles : *cf.* l'article

https://www.researchgate.net/publication/272679245_NumPy_SciPy_Recipes_for_Image_Processing_Creating_Fractal_Images

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